How do variations in the flow of clues, the reasoning required to connect them, and the means by which conclusions are tested shape the balance between accessibility, fairness, and player ownership in detective games?

David Gadelkarim
MA Game Design
Student Number: 20023028
Word Count: 5,940
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Introduction

Detective fiction has long balanced two competing impulses: giving the audience enough information to solve the mystery, while preserving surprise at the reveal. Early attempts at defining the genre's conventions such as S. S. Van Dine's "Twenty Rules for Writing Detective Stories" highlight this duality, stating that "No willful tricks or deceptions may be placed on the reader other than those played legitimately by the criminal on the detective himself" and "The reader must have equal opportunity with the detective for solving the mystery." (Van Dine, 1928). This pursuit of fairness within detective fiction was popularized in Arthur Conan Doyle's Sherlock Holmes stories, in which solutions were predicated on logic drawn from observation, which can be seen in the following excerpt from The Adventure of the Cardboard Box, "We approached the case… with an absolutely blank mind… We were simply there to observe and to draw inferences from our observations" (Doyle, 1893).

Across classic detective literature, "fair play" is fundamentally a question of how evidence is made available, how competing signals are managed, and how a conclusion can be justified. Ronald Knox's "Decalogue" makes this explicit, positing that no decisive surprises should appear in the final chapter, the culprit should appear early, the supernatural is disallowed, and more, all so that readers and the detective within the text share an intelligible evidence set (Knox, 1929). When these norms move into an interactive context, they become not just narrative rules but system rules.

This premise raises design questions about how clues are surfaced to players, what level of reasoning is demanded to connect them, and by what mechanisms a conclusion is checked. In Quantic Dream's *Heavy Rain* (2010), for instance, investigation often unfolds through quick-time events and constrained scanning, where progression follows prompts rather than open interpretation. By contrast, Sam Barlow's *Her Story* (2015) asks players to reconstruct events by freely querying a video archive, shaping their own path through the material and reaching a conclusion through the patterns they assemble. These titles illustrate a spectrum in how evidence flows, how much interpretive work is expected, and how conclusions are verified, differences that materially shape the experience of detective play.

Thus, this thesis examines how variations in the flow of clues, the reasoning required to connect them, and the means by which conclusions are tested shape the balance between accessibility, fairness, and player ownership in detective games. Through a contextual review linking fair-play traditions to interactive systems, and comparative case studies featuring *L.A. Noire* (2011) and *Return of the Obra Dinn* (2018), the study develops a design framework that shows how transparent evidence flow, restrained steering, and clear, consistent verification can preserve fairness and accessibility while maximising players' sense of ownership over the reasoning that leads to a conclusion.

Literature Review

Defining Deduction (and Investigation) for Detective Play

In detective studies and philosophy of reasoning, an inference is a term for evidence based reasoning that can be categorised into three approaches: deduction, induction, and abduction. This premise is thoroughly explored in a paper on Abduction published in the Stanford Encyclopedia of Philosophy, wherein it is stated that deduction denotes that if an inference is true, then the conclusion that is drawn from that inference is true by necessity. However, that is not the case for either induction or abduction, which are inferences that do not definitively prove their hypotheses. Inductions are inferences in that vein that rely on statistical data, where a wider inference is made based on that data, while in abduction there is an "implicit or explicit appeal to explanatory considerations" meaning that those inferences are always subject to contextual consideration. (Douven, 2011). In that sense, what is commonly referred to simply as "deduction" in the context of detective fiction, are actually inferences that mix deductive, inductive, and abductive reasoning.

The Sign of Three: Dupin, Holmes, Peirce is an exploration of Holmesian detective fiction featuring several essays. Umberto Eco's "*Horns, Hooves, Insteps: Some Hypotheses on Three Types of Abduction"* expands on abduction, providing four subcategories: overcoded abduction (the application of an already established rule), undercoded abduction (selecting the most likely out of a series of plausible rules), creative abduction (the invention of a new rule), and meta-abduction (testing the rational plausibility of an abduction). Here, "rule" is a term made to encompass the means upon which an interpretation comes to light (Eco, 1983, pp. 198-220).

Within the same book, Carlo Ginzburg presents an essay by the title of *Morelli, Freud, and Sherlock Holmes: Clues and Scientific Method*. In this piece, he compares Giovanni Morelli's method of attributing paintings through minor details, Freud's analysis of seemingly trivial slips and symptoms, and Sherlock Holmes's practice of inferring from overlooked traces. For Ginzburg, all three operate by treating minor perceived signs as diagnostic evidence that can reveal deeper truths (Ginzburg, 1983, pp. 81–118). In later work, most famously in his essay *Clues: Roots of an Evidential Paradigm*, he developed this insight into what he coined the "evidential paradigm": a model of knowledge built not from universal laws but from interpreting singular clues (Ginzburg, 1989, pp. 96–125). This notion of evidence-based reasoning has since been influential in both literary studies and historical method, and provides a framework for understanding detective deduction as the disciplined reading of traces.

This connection between reasoning and narrative is developed further in Tzvetan Todorov's essay *The Typology of Detective Fiction*. Todorov argues that every detective story is composed of two distinct but interrelated narratives: the story of the crime and the story of the investigation. The first is always retrospective, pieced together only at the end, while the second unfolds in the present tense as the detective and reader work through signs, noise and evidence to unravel the story of the crime (Todorov, 1977, pp. 44–52). The act of deduction therefore cannot be separated from the investigative process, because it is only through the reconstruction of the second story that the first becomes intelligible.

These findings have been extended into the video game space, by showing that when detective fiction becomes interactive, deduction is no longer just narrated but enacted. Noah Wardrip-Fruin in his paper *Defining Operational Logics* introduces the concept of operational logics, which describe how systems communicate processes to players through interfaces and feedback. In the context of detective games, these logics define how players are allowed to interact with evidence, and therefore govern the forms of inference that become possible whether it be deduction, induction, or the different forms of abduction (Wardrip-Fruin, 2009). This suggests that deduction in video games is structured not only by narrative conventions but by the underlying computational rules that exist as the framework in which inference is performed by the player. These rules that govern detective play can be contextualised through three verbs. A 2021 article by Antony de Fault identifies three pillars for investigative gameplay: validation, ownership, and research, verbs that can be used to instill the experience of play within a detective game (de Fault, 2021). These insights demonstrate that in interactive media, deduction is actually better labelled as inference, and is an umbrella term that governs several forms of evidence based reasoning, which can all be applied to the interactive digital medium of video games.

Taken together, these sources define the forms of inference and show how detective work becomes a playable loop of observation, hypothesis, testing, and confirmation, giving this thesis a precise analytic vocabulary for reasoning in games

Fair Play, Information Disclosure, and Guidance

The detective genre is historically anchored in the principle of "fair play," the idea that a mystery is only legitimate if the audience has the same evidentiary access as the detective and can, in principle, solve the case alongside or before the detective does. This principle is examined most plainly by S. S. Van Dine in *Twenty Rules for Writing Detective Stories*, which opens with the requirement that "the reader must have equal opportunity with the detective for solving the mystery" and prohibits "willful tricks or deceptions" that would hide decisive information from the audience (Van Dine, 1928). Ronald Knox's "Decalogue" (1929) further reinforces this same premise through specific constraints: the culprit must be introduced early, supernatural agencies are barred, and no decisive last-minute arrivals should resolve the plot, all of which keep the available evidence intelligible and shared between detective and audience (Knox, 1929).

John G. Cawelti's analysis of the classic detective formula validates the requirement for fair play in detective stories, by linking reader satisfaction to a managed economy of clues and misdirections that culminates in a resolution that is reached through the retrospective intelligibility of the evidence (Cawelti, 1976, pp. 80-105). Contemporary criticism also interprets fair play as a stance on how much the text guides attention while preserving uncertainty. In an article in the New Yorker discussing poet and essayist T.S. Eliot's view on what makes great detective fiction, mysteries that remain solvable by an attentive audience without absurd contrivances, thereby aligning the value of a detective story with transparent disclosure rather than with rule-breaking surprise are seen as the most favorable form of detective fiction (Grimstad, 2016).

Thus, fair play is defined as an information-disclosure contract, dictating what to reveal, when, and how, and linking solvability to earned closure and supplying criteria for evaluating guidance in the case studies.

Information Design in Games

Puzzle Dependency Charts are a tool used primarily in adventure games, wherein all the steps for puzzle solving are connected and mapped out in a diagram.

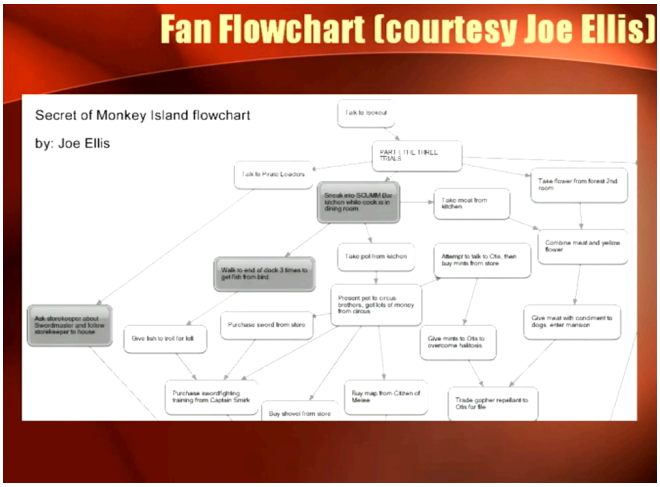


Figure I. A Puzzle Dependency Chart of The Secret of Monkey Island, made by a fan (Falstein, 2013).

This idea is covered extensively in a 2013 GDC talk by Noah Falstein, describing it as an optimal way to create engaging exploration and solving with the puzzle game genre that encourages player autonomy (Falstein, 2013), and this chart can be connected directly to the detective games genre through Jon Ingold's 2022 GDC talk *The Burden of Proof*. In this talk, he simplifies the detective gameplay formula to its absolute simplest in a linear three part graph.

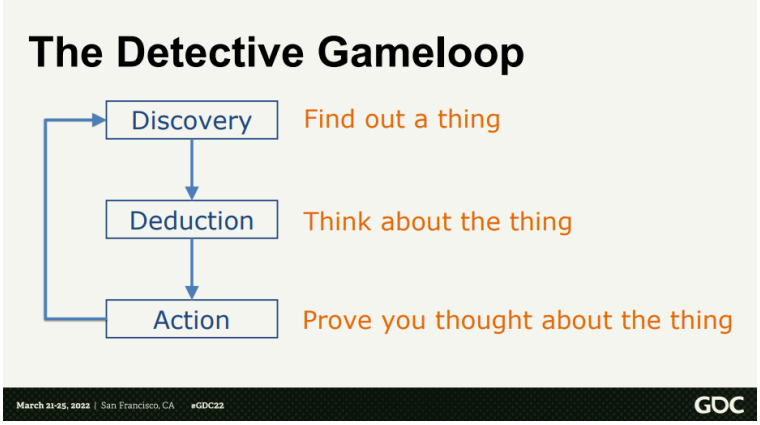


Figure II. The Detective Gameloop diagram from Jon Ingold's 2022 GDC Talk (Ingold, 2022)

This model starts with the player discovering information, followed by the player thinking about that information, and concludes with the player presenting proof to the games system that they have thought about that information. This simplified model titled “The Detective Gameloop” combined with the Puzzle Dependency Charts creates an effective means to visually present the flow of information within a detective game. (Ingold, 2022).

As for how players interact with said information, Peter Pirolli’s Information Foraging Theory can be applied to detective game design, which asserts that people search for information based on the perceived value they gain from said information (Pirolli, 2007). However, there is also the risk of demotivating players through an abundance of information, which is a concept examined in a Stanford and Columbia University psychology study titled *When Choice is Demotivating: Can One Desire Too Much of a Good Thing?* This study warns that very large option sets can depress commitment and quality unless choices are structured (Iyengar & Lepper, 2000). In that sense it is important to provide guidance to players, as guidance is linked to sustained engagement in motivational psychology. This is exemplified in the Self-Determination Theory which finds that satisfaction in play depends on the player’s perception of their own competence and autonomy. Mastery of the game systems is “necessary, but not sufficient” for satisfying play, and overly complex or non-intuitive interfaces, as well as overly abundant information frustrate competence (Przybylski, Rigby & Ryan, 2010).

These sources create a visual model to examine the structure of information within detective games, as well as a psychological model to examine the effects information and choice have on players.

Methodology

Research Subjects

This study examines two titles that occupy distinct positions on a spectrum that will be mapped concerning the flow of information, the means of inference, and the means of solution within detective game design. The following titles will be examined:

- *L.A. Noire* (Team Bondi/Rockstar, 2011) - A 1947 Los Angeles police drama structured as a sequence of self-contained cases embedded in an open-world city. Progress rests on three broad systems: (1) scene work, searching crime locations for examinable objects that are logged in a case notebook (people, locations, clues); (2) evidence presentation, selecting and presenting items from the notebook at the right moments; and (3) interrogations, where the player discerns whether witnesses or suspects are lying or saying the truth as they are being questioned.
- *Return of the Obra Dinn* (Lucas Pope, 2018) - A non-linear shipboard investigation, uncovering the fates of the passengers upon the Obra Dinn. The player, acting as an insurance inspector, explores an abandoned merchant vessel and uses a timepiece to enter frozen snapshots of each of the Obra Dinn's 60 passengers' final moments, with brief audio prefaces. All sixty souls must be resolved in a logbook by supplying three fields: identity, cause of death/means of survival (selected from an extensive verb list), and, where applicable, the agent responsible for their fate.

Method

For each game, an analytic playthrough was conducted and the the first major instance of inference was closely examined, which was classified as the first moment at which the game compels the player to form and submit a claim, and the system evaluates that claim against the available evidence to deliver an explicit judgment of correctness. This was based on the playthroughs personally conducted of both games for the sake of this thesis. Each instance was broken into four traceable phases:

- The ways in which clues, evidence, inferences, and solutions are interconnected.
- The moment of discovery (where and how the player is brought into contact with that information).
- The thinking phase (the forms of inference the player is expected to make, and the ways in which the game system allows them to organize their reasoning if applicable).
- The proof phase (how the game obliges the player to demonstrate they have reasoned and thought about the information provided to them).

To keep the analysis comparable across titles, each case was diagrammed in two complementary ways: a Puzzle/Information Dependency Chart that visualises the relationships among clues and gates in adventure games, that was slightly altered to fit the detective game genre (Falstein, 2013), and a Detective Gameloop chart from Jon Ingold's *Burden of Proof* framework, which visualizes the player experience comprehending and analysing the information provided by each game (Ingold, 2022). These findings were supplemented by all the research established within the literature review, in order to comprehensively explore these case studies and subsequently create a design framework that examines the relationship between information disclosure and guidance in games, and the player's experience of play within a detective game.

Case Study

Case #1: *L.A. Noire* (2011)

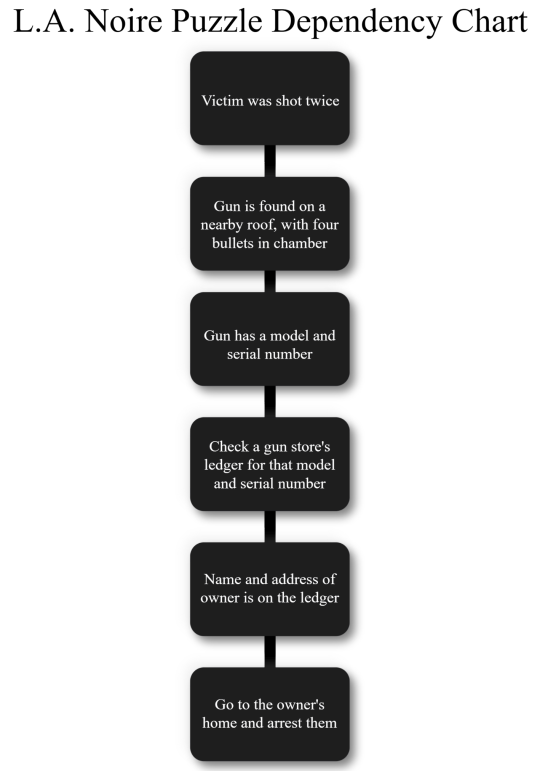


Figure III. Puzzle Dependency Chart for *L.A. Noire* (2011) for the game's first moment of playable inference. (Falstein, 2013)

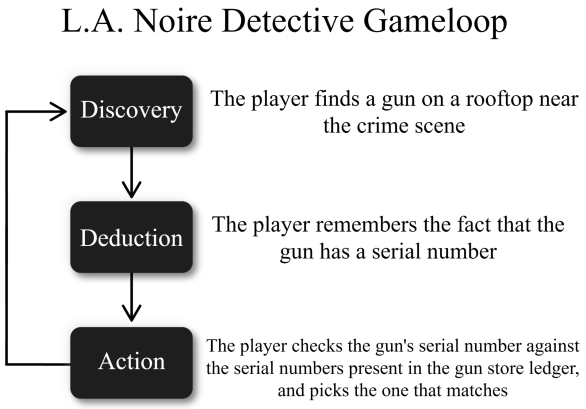


Figure IV. Detective Gameloop diagram for *L.A. Noire* (2011) for the game's first moment of playable inference. (Ingold, 2022)

This case study examines the tutorial sequence in which the player finds a discarded pistol near a crime scene, notes its model and serial number, and uses that serial to query a gun-store ledger to identify the registered owner. This moment is considered for the sake of this thesis as the first substantive

inference checkpoint because the system requires the player to form and submit a claim about identity and then adjudicates it immediately via the ledger and ensuing arrest; mapped onto Ingold's simple detective gameloop, it is a clear instance of a discovery, deduction, and action cycle, as seen above in Figure IV (Ingold, 2022).

The structure of this task is entirely linear. As shown in the Puzzle Dependency Chart in Figure III, each step is prerequisite to the next, with no branching or backtracking. Puzzle Dependency Charts are a valuable aid in visualizing to designers several facets of an adventure game's puzzle design, key being the progression of clues and their complexity and solvability (Falstein, 2013). In that sense, the complete linearity found within this sample of *L.A. Noire* (2011) is emblematic of a game with minimal complexity, easily attainable solvability, and an entirely direct progression of clues.

Viewed through the lens of fair play, the sequence provides and heavily highlights the decisive information to the player. The crucial clue (the serial number) appears before the solution step (the ledger), and the resolution does not depend on late-arriving contrivances. This matches Van Dine's prescriptions in *Twenty Rules for Writing Detective Stories*, that the reader or in this instance, the player, must have equal opportunity with the detective and that decisive surprises should not emerge at the end (Van Dine, 1928). The resulting closure is retrospective and earned, once the owner is revealed, prior cues are re-interpretable as already present and intelligible, as is corroborated by John G. Cawelti's analysis of the classic detective formula (Cawelti, 1976, pp. 80–105). Success in this regard, results in a mystery that feels satisfying to the audience as per Cawelti.

How the game provides the player with information on the gun and serial is straightforward and intuitive. The player is presented with a comprehensive case file in the form of a notebook they can open at any time that catalogues people, places, and collected clues, it provides the player with a written account of every piece of information they need that is of relevance, and leaves out irrelevant detail, seen below in Figure V.

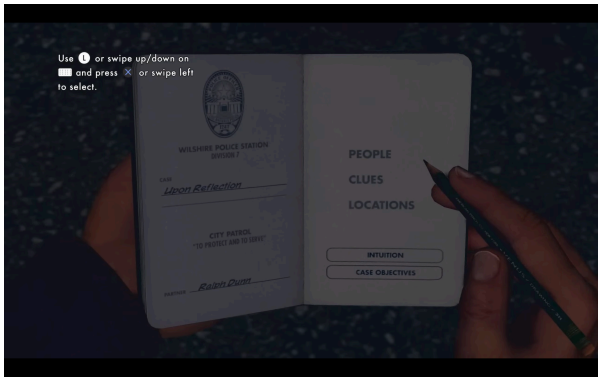


Figure V. A Steam screenshot of *L.A. Noire's* notebook, which provides detailed accounts of the case in an organized manner. (2011)

This is supplemented by optional hinting through options called "Clue Hints" found within the main menu, that allow the player to receive guidance via audio, controller vibration, and visual icons to heavily mark points of interest to the player, thereby reducing the interaction cost of finding and inspecting the right object. This is precisely the trade-off stated by Information Foraging Theory, which models users as maximising knowledge gained per unit cost (Pirolli, 2007, pp. 12–13). In the case of *L.A.*

Noire (2011), the game provides the player with a simple and convenient manner to access the case's most crucial information, making the cost of information low, while the information gained is high.

From a motivational standpoint, this is a way to support player competence. Self-Determination Theory makes the positives and negatives of such an approach apparent. Legible presentation and timely feedback facilitate successful action, meaning that the excess guidance at low cost provided to players of *L.A. Noire* (2011) ensures that at all times, the player has a strong competence of the case and the inferences that they are expected to make. However, this comes at a cost, as heavy guidance can compress autonomy if it forecloses exploratory paths, a tension that is well documented in Self-Determination Theory (Przybylski, Rigby & Ryan, 2010, pp. 155–160). This results in an experience of detective play that is easily accessible to all players, but one that stifles player autonomy, as is corroborated by the Puzzle Dependency Chart in Figure III, revealing *L.A. Noire's* (2011) entirely linear approach to the gathering of clues.

As for the ways in which the player is expected to deduce and act, this can be examined through the form of inference within this section. Referring back to the deduction and action in Figure IV, the shape that the inference takes can largely be classified as simple deduction: the existence of the evidence, directly proves the hypothesis. (Douven, 2011). That is, the system frames the action of reasoning as recognising a known fact, and mapping that to an available framework in the ledger (which can be seen below in Figure VI), rather than hypothesising among rivalling possibilities. This is a means of inference that is simple, direct, and based on absolute premises, which aids the suggestion made above through the Information Foraging Theory that *L.A. Noire* (2011) is designed to aid player competence, resulting in less challenging detective gameplay. In Todorov's terms within the *Typology of Detective Fiction*, the "story of the investigation" in this instance is tightly scripted and linear in order to make the "story of the crime" legible with minimal to no ambiguity (Todorov, 1977, pp. 44–52).

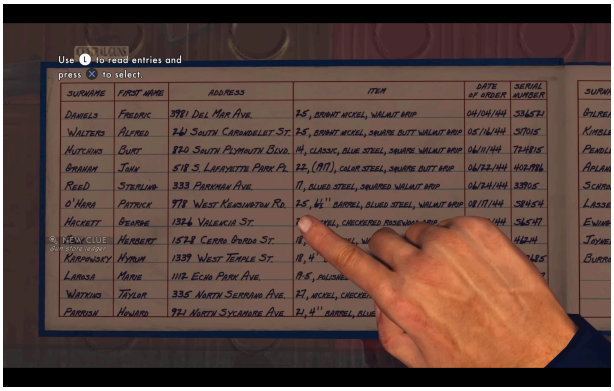


Figure VI. A Steam screenshot of the gun ledger *L.A. Noire* (2011), which presents a list of gun owners, alongside their addresses and serial numbers, and the player has to move their hand and tap on the correct owner. (2011)

The system the game uses to judge the player's knowledge is categorical and immediate, the player merely points at the correct name, and the game progresses without punishing the player for pointing at any of the other names. Instead of inviting the player to articulate or assemble a justification, this system validates the claim the instant the player makes a correct connection. In Ingold's terms, the loop accepts the player's claim and instantly proves (or disproves through a lack of response) it against a

fixed evidential rule (Ingold, 2022). As a result, the game values the validation of the player's argument over the ownership that the player has over their reasoning. In the article highlighting a posited three verbs for detective gameplay, that being validation, ownership, and investigation it is stated that "there's no need to validate every little deduction possible during an investigation" and that "the player has to come up with their deduction without feeling overly influenced by the game's content or design" (de Fault, 2021). *L.A. Noire's* (2011) design standing in contrast to these assertions, results in an immediate verdict that narrows the possibility space of inference and shortens the "deduction" phase of the Detective Gameloop in Figure IV.

Research on the effects of choice on players reinforces this orientation. At each decision point there is effectively one object of interest to inspect and one correct means of solution to consult, the result is a small, heavily structured choice set. The study *When Choice is Demotivating: Can One Desire Too Much of a Good Thing?* suggests that such constraints can improve commitment and performance from players when their mastery is not yet formed (Iyengar & Lepper, 2000, pp. 995–1000). In early play, this helps establish procedural mastery, however, later, if left unchanged, it risks flattening the challenge by limiting opportunities for undercoded or creative abductions, leaving every means of inference in the game to become simple instances of deduction, resulting in detective gameplay where layered and creative thinking is not required nor encouraged. Rather, inference is made by proving hypotheses directly through their constituent evidence (Eco, 1983, pp. 206–207).

Read alongside established fair-play tradition, *L.A. Noire's* (2011) tutorial checkpoint exemplifies one end of the spectrum identified in this thesis: maximally guided disclosure plus immediate, categorical validation, producing an experience of deduction that is orderly, solvable, and procedural rather than exploratory. It is a game that is easily accessible, maximizes the player's feeling of mastery, while providing them minimal ownership over their own deduction, and limiting the extent at which they can practice their own reasoning.

Case #2: *Return of the Obra Dinn* (2018)

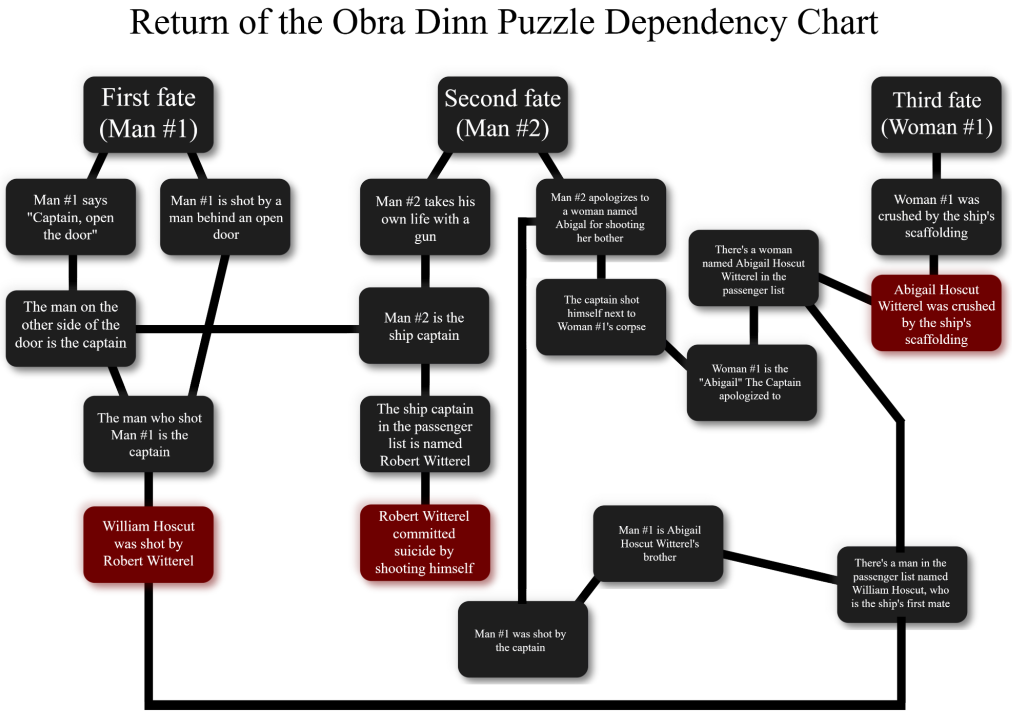


Figure VII. Puzzle Dependency Chart for *Return of the Obra Dinn* (2018) for the game's first section of playable inference. The boxes that are in red are the full fates of the characters. (Falstein, 2013)

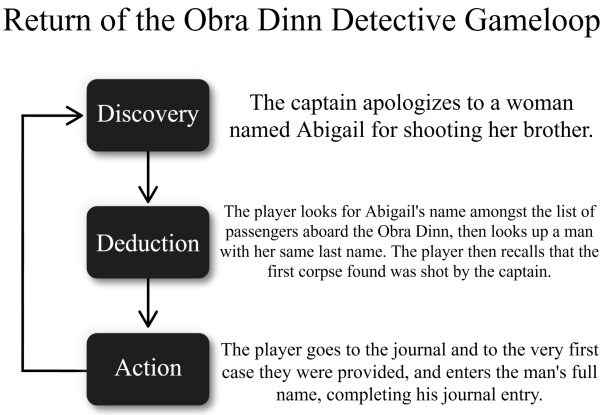


Figure VIII. Detective Gameloop diagram for *Return of the Obra Dinn* (2018) for the game's first section of playable inference. This highlights just one moment of inference within this initial section, which involves figuring out the identity of Man #1. (Ingold, 2022)

The first substantive inference checkpoint in *Return of the Obra Dinn* (2018) is not a single clue-and-response loop, but rather the interlinked resolution of three fates aboard the abandoned ship. Unlike *L.A. Noire* (2011), which validates deductions immediately upon selection, *Obra Dinn* (2018) only confirms or denies conclusions once three fates are simultaneously correct. This design means that inference is distributed across multiple threads of reasoning, some unfinished, some provisional, and

some immediately testable, with confirmation deferred until three are aligned. The result is a constant juggling of hypotheses, where every conclusion depends on cross-referencing several bodies of evidence and maintaining a mental map of incomplete leads, which can be visualized in the interconnections of Figure VII's Puzzle Dependency Chart, juxtaposed with the entirely linear graph present in *L.A. Noire's* (2011) Figure III. This in turn validates Antony de Fault's verbs of detective play by privileging ownership of inference: the player is rarely directly validated until multiple hypotheses align, and so every breakthrough feels self-authored rather than system-fed (de Fault, 2021). Compared to *L.A. Noire* (2011), which foregrounds validation, *Obra Dinn* (2018) foregrounds ownership, compelling players to construct meaning from ambiguous traces and accept responsibility for their own inferential leaps.

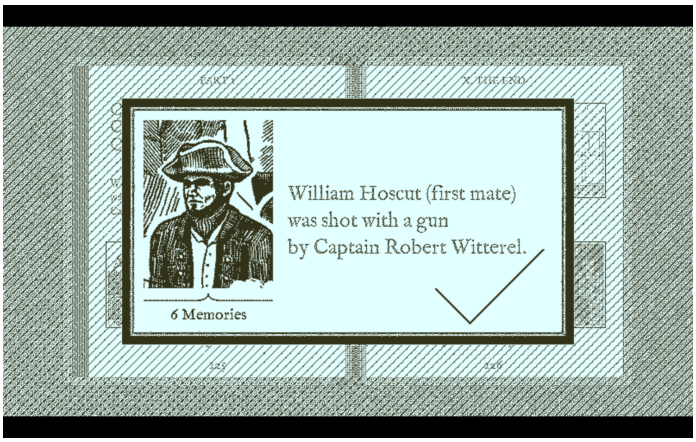


Figure IX. A Steam screenshot taken of *Return of the Obra Dinn's* journal, showcasing the completed journal entry of Figure VII's Man #2. (2018)

Above in Figure IX, is a sample of the journal entries within *Return of the Obra Dinn* (2018), which are the means in which the player acts upon their inferences. The player's task at this early stage requires filling in three pieces of information for each character: the character's identity, the cause of their death, and, if they were murdered, the agent responsible for their murder. Complicating this process further is the verb list of 48 options from which the player must select the cause of death. This taxonomy of possibilities, ranging from "shot with a gun" to "burned," "spiked," or "unknown", expands the interpretive field, alongside the complexity provided through the three fates judging rule established above, forcing the player to weigh fine-grained distinctions and increasing the cognitive cost of every inference, as posited by Iyengar and Lepper's research on the effects of choice on players. However, this list of verbs simultaneously provides structure to the "action" phase of the Detective Gameloop, as it provides the player a firm possibility space rather than a completely open one. Where *L.A. Noire* (2011) collapses choice into highly guided decisions, *Obra Dinn* (2018) overwhelms the player with an expansive but carefully delimited choice set, echoing Iyengar and Lepper's finding that too many options can demotivate unless carefully structured (2000, pp. 995–1000). The structure in *Obra Dinn* (2018) is further enhanced through the consistent framework within that "action" phase of its Detective Gameloop. Every case of inference ultimately comes down to the aforementioned three pieces of information that the player is required to fill in for all 60 passengers aboard the Obra Dinn (2018), providing a structured consistency despite the large abundance of choice sets.

The operational logic (Wardrip-Fruin, 2009) within the "action" phase, shown in Figure VIII, is notably simplified compared to the complex "deduction" phase which can be observed in the web of inferences and clues within Figure VII. Despite the wide difference in player inference within both Return of the *Obra Dinn* (2018) and *L.A. Noire* (2011), their operational logics are both simple within the "action" phases of their respective Detective Gameloops. Regardless of the reasoning pathway that led there, the player always enacts their conclusion in the same way: by recording a character's name, fate, and killer in the logbook. This uniformity of action focuses the game squarely on inference itself. Where *L.A. Noire* (2011) balanced deduction and action with immediate system validation, *Obra Dinn* (2018) invests almost all of its weight in the investigative reasoning process. As Todorov argued, detective fiction always contains two stories, the story of the crime and the story of the investigation, and in *Obra Dinn* (2018), the player's engagement lies overwhelmingly in the latter (Todorov, 1977, pp. 44–52). The crime is revealed only retroactively, reconstructed through a dense chain of inferential labor.

This dense inferential model resonates with Carlo Ginzburg's "evidential paradigm," which privileges singular clues, slips, or overlooked details as the crucial keys to deeper truths within detective fiction (1983, pp. 81–118). For instance, the captain's apology to Abigail functions not as a statistically grounded inference but as an evidential fragment whose significance emerges only in its interpretive context. Similarly, Giovanni Morelli, the Italian art critic whose critiques Ginzburg likens to the deductions of Sherlock Holmes, attributes paintings via minor details, which is a method that finds an analogue in *Obra Dinn* (2018)*'s* reliance on granular spatial, visual, and auditory cues scattered across frozen death-scenes, as is seen in the clues within Figure VII, a lot of which require detailed visual scrutinization of the scene presented to the player. By placing heavy emphasis on the interpretive act of reading traces, *Obra Dinn* (2018) operationalizes Ginzburg's historical model of reasoning into a playable form, making it, according to Ginzburg's findings, an ideal example of thoughtful detective storytelling and rich inferential reasoning.

The richness of inferential reasoning in this sequence distinguishes *Obra Dinn* (2018) from the strictly deductive model exemplified by *L.A. Noire* (2011). As Figure VII demonstrates, solving the fates of William Hoscut, Robert Witterel, and Abigail Hoscut Witterel involves not only deduction (for example, deducing that the captain committed suicide because he was visually shown pointing a gun at himself in his final moments and was heard apologizing before a gunshot sounded off, a visual of which can be seen below in Figure X) but also induction (inferring that a man who shared Abigail's last name could be her brother), and multiple forms of abduction as classified by Eco. Overcoded abduction occurs when the player applies established narrative rules, for instance, interpreting that a man addressed as "Captain" is indeed the ship's captain. Undercoded abduction is required when multiple plausible rules must be weighed, such as inferring Abigail's identity to be the woman next to the captain as he takes his own life, despite that not being a concrete fact to build an assertion upon. Creative abduction can be used to link all of the inferences made into a cohesive narrative, such as inferring that William Hoscut, the first mate, banging on the Captain's door with an axe in hand (seen below in Figure XI), only to get shot by the captain, could infer a failed mutiny by the first mate. All of this is layered with meta-abduction, which is built into the design, as the player constantly evaluates whether their provisional hypotheses are rational enough to commit to the logbook (Eco, 1983, pp. 206–210). The game not only tolerates but demands this layered reasoning, expanding detective play into a field of experimentation rather than scripted deduction.

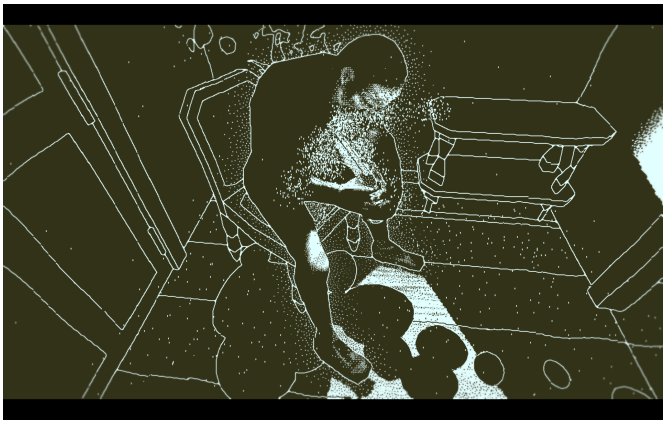


Figure X. A Steam screenshot of Captain Robert Witterel's moment of death, showing him pointing a gun to himself, and the ensuing gunshot that took his life. (2018)

Figure XI. A Steam screenshot of First Mate William Hoscut's moment of death, showing him with an axe in hand, after calling out to the Captain to open his door, before being shot to death by Captain Robert Witterel. (2018)

However, *Return of the Obra Dinn* (2018) provides further challenge to the player through the use of noise and misdirections. In this first section, for instance, there are five characters total whose fates the player can surmise, however, of those five, the player only has the information required to solve the three mentioned in Figure VII, turning the other two into noise that the player must maneuver around to successfully reach the first inference checkpoint of uncovering three fates. This practice of noise is highlighted in the aforementioned *Typology of Detective Fiction*, in which the "story of the investigation", which *Obra Dinn* (2018) prioritizes over the "story of the crime" requires the detective and reader sorting through signs, noise and evidence to unravel the story of the crime. Noise is an integral facet of this formula, as it adds unpredictability to the mystery, in the shape of misdirecting signals (Todorov, 1977, pp. 44–52).

Read as a counterpoint to the first case study of *L.A. Noire* (2011), *Return of the Obra Dinn* (2018) exemplifies the opposite pole of the spectrum: a detective game that decentralizes guidance, multiplies possible inferences, and places the bulk of design weight on the interpretive labor of the player. It is a work of detective play that demands creativity, patience, and evidential reasoning, giving players agency not only in reaching conclusions but in deciding how to reason their way there.

Design Framework

The primary visual means that were used throughout this thesis to discern the means of discovery, inference, action, the flow of information and the connections between clues within detective games have been Puzzle Dependency Charts (Falstein, 2013), and The Detective Gameloop (Ingold, 2022), and the findings were the following. Beginning with The Detective Gameloop, Figures XII - XV below present a framework for the loop the player undergoes in a detective game whenever they become aware of a new clue or a piece of evidence.

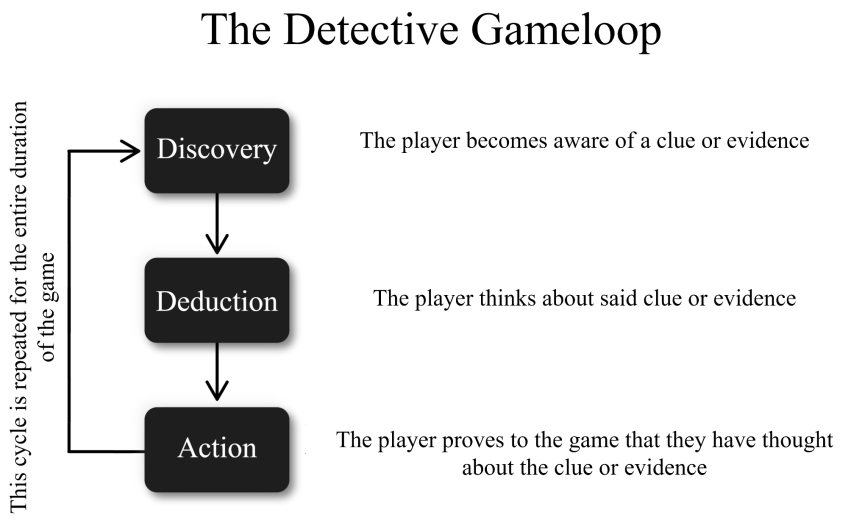


Figure XII. A recreation of Jon Ingold's model of The Detective Gameloop. (Ingold, 2022)

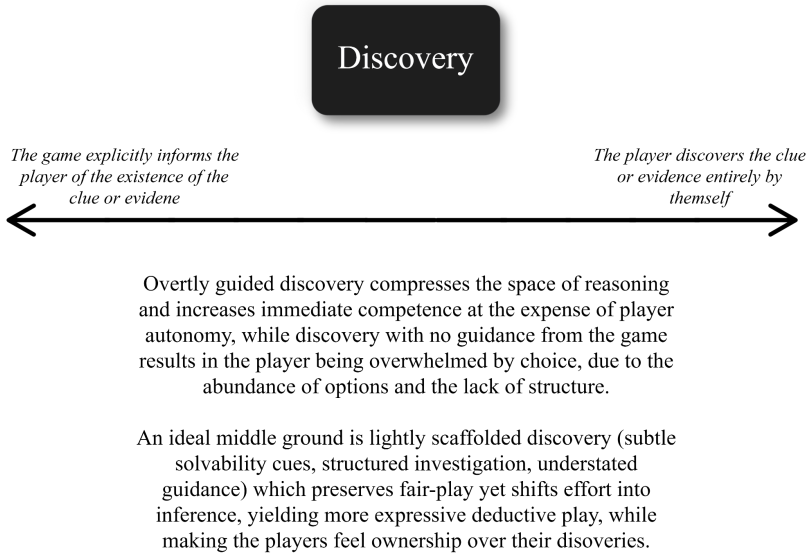
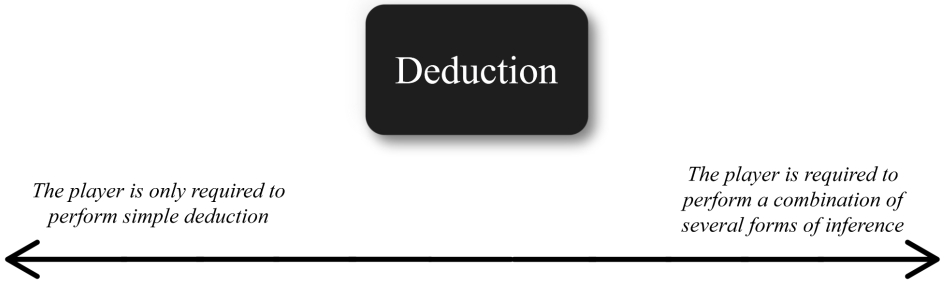


Figure XIII. The conclusions drawn within this thesis regarding the "Discovery" phase of The Detective Gameloop.



In order for the player to practice remotely satisfying detective gameplay, the "Deduction" phase, also referred to as inference, has to be on the spectrum above. If the player is required to perform no inferences, then they are not doing detective work, while if the player is expected to make unreasonable and unfair inferences, then that violates the concept of fair-play.

The more a game leans to the left side of the spectrum, the more it favors accessibility, at the cost of player's feeling ownership over their reasoning. On the other hand, the more a game leans to the right side of this spectrum, the more it favors complex reasoning, with full ownership from the players, at the cost of accessibility. The more forms of inference the player is expected to make, the more complex the "Deduction" phase is.

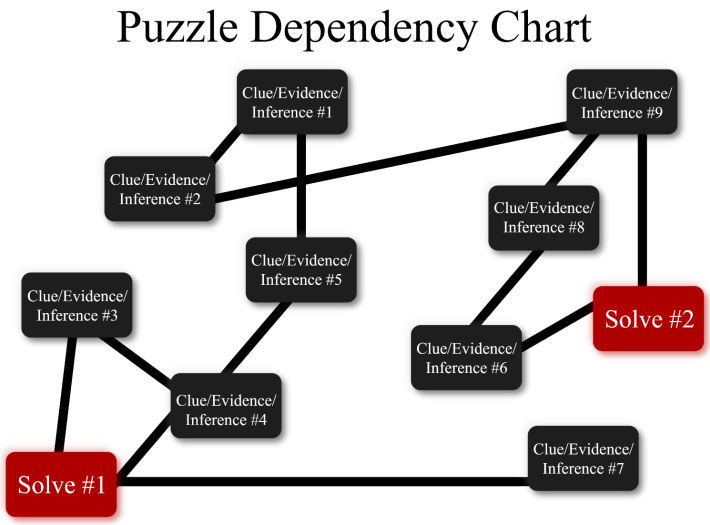
Figure XIV. The conclusions drawn within this thesis regarding the “Deduction” phase of The Detective Gameloop.

On this spectrum, the left end makes players prove their inferences through direct, consistent actions (the same simple submission grammar every time). This shrinks the possibility space of what can be expressed, but it frees cognitive effort for reasoning: players can focus on complex inferences because the way they submit them is stable and undemanding. Consistency also adds structure. as it orients the player when they’re juggling many clues, though if actions are too simple, they can cap the depth of reasoning the system will recognize due to a reduced possibility space.

At the right end, the actions used to prove inferences are complex and inconsistent (varying inputs, proof steps, shifting rules). This enlarges the possibility space but erodes coherence: without a stable submission framework, players face higher cognitive load exactly when they are also asked to make complex inferences. The result is a greater risk of overwhelming and chaotic play. The practical aim in this case is as follows: keep action direct and consistent enough to scaffold difficult inference, without flattening expressivity to the point that richer reasoning cannot be meaningfully submitted.

Figure XV. The conclusions drawn within this thesis regarding the “Action” phase of The Detective Gameloop.

As for the ways in which the clues connected to each other, in order to form a complete case, that can be examined below in Figures XVI and XVII, which provide a framework for the ways in which clues and evidence interact and connect within a detective game through Puzzle Dependency Charts.



Clues/Evidence - Information the player receives that aids them in constructing inferences and solutions

Inference - Hypotheses reaced through the player thinking about clues and evidence

Solve - Instances in which the player is required to present proof of their inferences to the game system

Figure XVI. A recreation of a blank Puzzle Dependency Chart, that was altered to fit Detective Games rather than their intended purpose for Adventure Games. (Falstein, 2013)

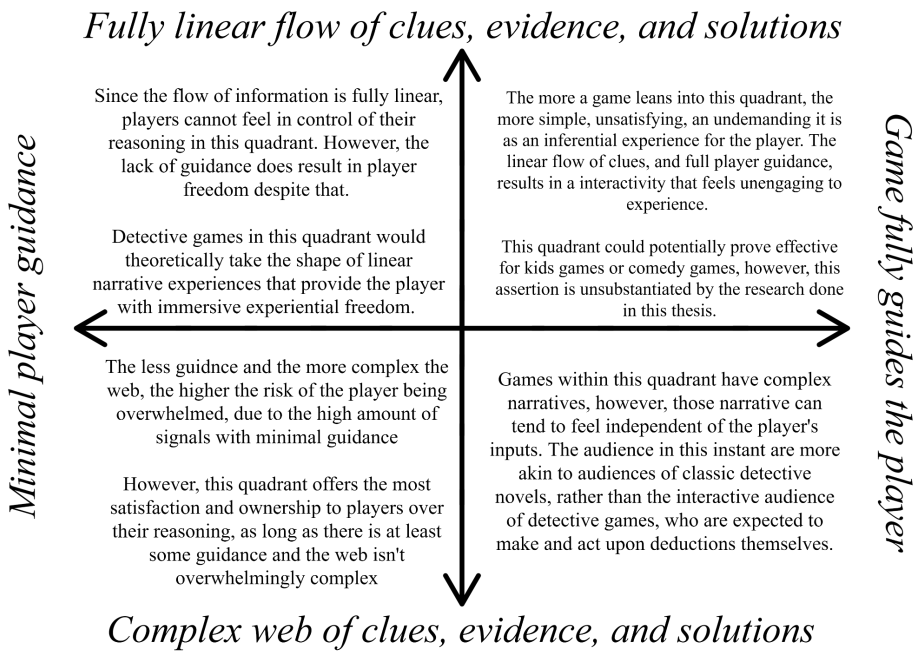


Figure XVII. A diagram that explores the relationship between the complexity of a Puzzle Dependency Graph and the amount of guidance within a detective game.

Conclusion

This thesis set out to identify how variations in the flow of clues, the reasoning required to connect them, and the means by which conclusions are tested shape accessibility, fairness, and player ownership in detective games. The design framework built from the case studies shows the three key elements of detective gameplay. First, the structure of clue-flow, when evidence is surfaced in a guided, linear order, search cost is low and fairness is legible, but players have limited space to pursue competing lines of inquiry. When evidence is surfaced more openly, players assume control of pacing and strategy, but must tolerate noise in the shape of false leads and misdirections, resulting in a higher cognitive load. Second, the breadth of reasoning, tightly sequenced flows of inference invite simple single-step logic, whereas broader, cross-linked webs of clues, evidence, inference and solutions elicit mixtures of deduction, induction, and abduction. Puzzle Dependency Charts make this relationship visible, with a "sweet spot" at moderate branching and risks of overload at the extremes. Third, the testing of conclusions, a direct, consistent means upon which the player can prove their reasoning preserves fairness and frees effort for thinking. Immediate checks maximize accessibility but limit expressive reasoning, while deferred checks allow complex hypotheses to naturally develop, increasing player ownership over their reasoning.

Read through this lens, the two cases present different sides of the established spectrum: *L.A. Noire* (2011) shows guided clue-flow, single-step reasoning, and instant checks, while *Return of the Obra Dinn* (2018) shows open evidence, layered inference, and deferred validation. The framework turns those contrasts into knobs designers can set, with how clues flow, the form of thinking required, and how proof is submitted. Those knobs can be tuned deliberately to balance accessibility, fairness, and player ownership.

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List of Figures

Figure VII. A Puzzle Dependency Chart was created for this thesis covering *Return of the Obra Dinn* up until the game's first moment of playable inference. The boxes that are in red are the full fates of the characters, while the boxes in black are clues/evidence/inferences. Due to the nature of the game, the result is an interconnected web of clues, evidence, inferences, assumptions, guesses, and solutions.

> Falstein, N. (2013) 'The Arcane Art of Puzzle Dependency Diagrams'. Talk presented at Game Developers Conference (GDC), San Francisco, CA, March. Available at: https://www.gdcvault.com/play/1017978/The-Arcane-Art-of-Puzzle
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> Pope, L. (2018) Return of the Obra Dinn [Video game]. 3909 LLC. Available at: https://obradinn.com/

Figure VIII. A Detective Gameloop diagram was created for this thesis covering *Return of the Obra Dinn* up until the game's first moment of playable inference. This highlights just one moment of inference within this initial section, which involves figuring out the identity of Man #1.

> Ingold, J. (2022) 'The Burden of Proof: Narrative deduction mechanics for detective games', talk at Game Developers Conference (GDC), San Francisco, CA, 24 March. Available at: https://www.gdcvault.com/play/1027723/The-Burden-of-Proof-Narrative
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> Pope, L. (2018) Return of the Obra Dinn [Video game]. 3909 LLC. Available at: https://obradinn.com/

Figure IX. A screenshot of *Return of the Obra Dinn's* journal within the Steam (PC) release, showcasing the completed journal entry of Figure VII's Man #2. Journal entries within *Return of the Obra Dinn*, require the player to fill in the identity of a character out of a list of 60 passengers, their fate out of a list of around 50 total options some of which are red herrings, and if they were killed, the identity of whoever took their life from the list of 60 passengers and miscellaneous options featuring beasts and intruders. The game only confirms if the player is correct, if they get a set of 3of these journal entries correct.

> Pope, L. (2018) Return of the Obra Dinn [Video game]. 3909 LLC. Available at: https://obradinn.com/

Figure X. A screenshot of *Return of the Obra Dinn* within the Steam (PC) release, presenting Captain Robert Witterel's moment of death, showing him pointing a gun to his person, and the ensuing gunshot that took his life.

> Pope, L. (2018) Return of the Obra Dinn [Video game]. 3909 LLC. Available at: https://obradinn.com/

Figure XI. A screenshot of *Return of the Obra Dinn* within the Steam (PC) release, presenting First Mate William Hoscut's moment of death, showing him with an axe in hand, after calling out to the Captain to open his door, before being shot to death by Captain Robert Witterel.

> Pope, L. (2018) Return of the Obra Dinn [Video game]. 3909 LLC. Available at: https://obradinn.com/

Figure XII. A recreation of Jon Ingold's model of The Detective Gameloop diagram was made for the design framework, briefly describing the three stages of the loop in order to set a basis for the conclusions made about these stages within the framework.

> Ingold, J. (2022) 'The Burden of Proof: Narrative deduction mechanics for detective games', talk at Game Developers Conference (GDC), San Francisco, CA, 24 March. Available at: https://www.gdcvault.com/play/1027723/The-Burden-of-Proof-Narrative

Figure XIII. This diagram presents the conclusions drawn within this thesis regarding the "Discovery" phase of The Detective Gameloop. It charts a spectrum regarding the moment of discovery in terms of player agency when discovering clues/evidence, and then derives a brief conclusion from said spectrum.

> Ingold, J. (2022) 'The Burden of Proof: Narrative deduction mechanics for detective games', talk at Game Developers Conference (GDC), San Francisco, CA, 24 March. Available at: https://www.gdcvault.com/play/1027723/The-Burden-of-Proof-Narrative

Figure XIV. This diagram presents the conclusions drawn within this thesis regarding the “Deduction” phase of The Detective Gameloop. It charts a spectrum regarding the player’s thinking in terms of the variety of inference types required of the player by the game, and then derives a brief conclusion from said spectrum.

> Ingold, J. (2022) ‘The Burden of Proof: Narrative deduction mechanics for detective games’, talk at Game Developers Conference (GDC), San Francisco, CA, 24 March. Available at: https://www.gdcvault.com/play/1027723/The-Burden-of-Proof-Narrative

Figure XV. This diagram presents the conclusions drawn within this thesis regarding the “Action” phase of The Detective Gameloop. It charts a spectrum regarding the framework in which the game tasks the player with proving their knowledge to the game system in terms of the complexity of the aforementioned framework , and then derives a brief conclusion from said spectrum.

> Ingold, J. (2022) ‘The Burden of Proof: Narrative deduction mechanics for detective games’, talk at Game Developers Conference (GDC), San Francisco, CA, 24 March. Available at: https://www.gdcvault.com/play/1027723/The-Burden-of-Proof-Narrative

Figure XVI. A recreation of The Puzzle Dependency Charts covered in Noah Falstein’s 2013 GDC Talk was made for the design framework, and altered to fit Detective Games rather than their intended purpose for Adventure Games. This chart features clues, evidence, and solutions, as well as brief definitions of what those entail, and the means in which they would ideally connect within the context of a Detective Game.

> Falstein, N. (2013) ‘The Arcane Art of Puzzle Dependency Diagrams’. Talk presented at Game Developers Conference (GDC), San Francisco, CA, March. Available at: https://www.gdcvault.com/play/1017978/The-Arcane-Art-of-Puzzle

Figure XVII. A diagram that explores the relationship between the complexity of a Puzzle Dependency Graph and the amount of guidance within a detective game.

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